

In the Claims:

1. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ and a catalyst comprising at least one of a species selected from the group consisting of a multivalent transition metal ion, and a complex thereof; the species being in a state selected to accelerate in vivo oxidation of alcohol in the absence of a dehydrogenase where said catalyst effects the oxidation of $[[\text{alcohol}]]$ NADH, thus recycling NAD^+ .

2. (Previously Amended) The composition of Claim 1, the transition metal ion being selected from the group consisting of the elements of Groups IVa through VIII of the Periodic Table.

3. (Previously Amended) The composition of Claim 1, the species comprising one of a group selected from the group consisting of: vanadyl sulfate; potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis (tropolinato) niobium (V) chloride; tetrakis (tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

4. (Original) The composition of Claim 1 having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

5. (Original) The composition of Claim 1 having a quantity of NAD^+ sufficient to provide an in vivo concentration of NAD^+ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.

6. (Previously Amended) The composition of Claim 1 further comprising a base.

7. (Currently Amended) The composition of Claim 6, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to an acid resulting from the oxidation of the ethanol.

8. (Currently Amended) The composition of Claim 6 wherein the base is selected from the group consisting of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris (hydroxymethyl)-aminomethane.

9. (Previously Amended) The composition of Claim 1, further comprising an agent reactive with acetaldehyde.

10. (Previously Amended) The composition of Claim 9, the reactive agent being selected from the group consisting of lysine, arginine, thiamine, and pyridoxamine.

11. (Previously Amended) The composition of Claim 9 having a quantity of the reactive agent sufficient to provide an in vivo concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation of alcohol.

12. (Original) The composition of Claim 9, the reactive agent being a dehydrogenase.

13. (Previously Amended) The composition of Claim 12, the dehydrogenase being selected from the group consisting of alcohol dehydrogenase and acetaldehyde dehydrogenase.

14. (Previously Amended) The composition of Claim 12 wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

15. (Previously Amended) The composition of Claim 1 further including an accelerant.

16. (Previously Amended) The composition of Claim 15, the accelerant being selected from the group consisting of adenosine 5'-triphosphate, adenine-9- β -D-arabinofurasnoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

17. (Currently Amended) The composition of Claim 15, the accelerant being selected from ~~[[a]] the group~~ [[including]] consisting of fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

18. (Original) The composition of Claim 15, having a quantity of the accelerant sufficient to provide an in vivo concentration in the range from 1% to 100% of a maximum in vivo molar concentration of ethanol.

19. (Previously Amended) The composition of Claim 1, further including a charge-transfer agent.

20. (Previously Amended) The composition of Claim 19, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

21. (Currently Amended) The composition of Claim 20, wherein the isoflavanoid is daidzein and its pyranoside, ~~[[is]]~~ aloin.

22. (Previously Amended) The composition of Claim 19, the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

23. (Original) The composition of Claim 19 having a quantity of the charge-transfer agent sufficient to provide an in vivo concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo molar concentration of ethanol.

24. (Previously Amended) The composition of Claim 1, further comprising a surfactant.

25. (Currently Amended) The composition of Claim 24, the surfactant being selected from ~~[[a]] the group~~ ~~[[including]]~~ consisting of saponin, taurine, oleic acid and lecithin.

26. (Currently Amended) The composition of Claim 24, having a quantity of the surfactant sufficient to provide an in vivo ~~[[the]]~~ concentration ~~[[of the surfactant being]]~~ in the range 0.02% and 0.2% by volume.

27. (Original) The composition of Claim 24, wherein the surfactant is also a charge-transfer agent.

28. (Previously Amended) The composition of Claim 27, wherein the surfactant and charge-transfer agent is selected from the group consisting of lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof.

29. (Original) The composition of Claim 27, having a quantity of the surfactant and charge-transfer agent sufficient to provide an in vivo concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

30. (Previously Amended) The composition of Claim 12, further including a stabilizing ion.

31. (Original) The composition of Claim 30, the stabilizing ion being zinc.

32. (Original) The composition of Claim 31, the concentration of zinc ions being 1% the molar concentration of the dehydrogenase.

33. (Previously Amended) The composition of Claim 1, having also a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

34. (Original) The composition of Claim 1, having also a medication.

35. (Previously Amended) The composition of Claim 34, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and ~~[[acetaminophin]]~~ acetaminophen.

36. (Previously Amended) The composition of Claim 1, being configured in a form selected from the group consisting of a solution, suspension, capsule, gel caplet, transdermal patch, and nasal spray.

37. - 41. (Cancelled).

42. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ and one member selected from the group consisting of vanadyl sulfate [[or]] and a complex of vanadyl sulfate.

43. (Currently Amended) The composition of Claim 42, further comprising a species selected from the group consisting of a multivalent transition metal ion and a complex thereof, the transition metal ion being selected from the group consisting of the elements of Groups IVa through VIII of the Periodic Table.

44. (Previously Amended) The composition of Claim 43, wherein the species is selected from the group consisting of: potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; and chromium (III) picolinate.

45. (Previously Presented) The composition of Claim 42 having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

46. (Previously Presented) The composition of Claim 42 having a quantity of NAD^+ sufficient to provide an in vivo concentration of NAD^+ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.

47. (Previously Amended) The composition of Claim 42 further comprising a base.

48. (Currently Amended) The composition of Claim 47, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to an acid resulting from the oxidation of the ethanol.

49. (Currently Amended) The composition of Claim 47 wherein the base is selected from the group consisting ~~[[includes one]]~~ of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate ~~[[or]]~~ and tris(hydroxymethyl)-aminomethane.

50. (Previously Amended) The composition of Claim 42, further comprising an agent reactive with acetaldehyde.

51. (Previously Amended) The composition of Claim 50, the reactive agent being selected from the group consisting of lysine, arginine, thiamine, and pyridoxamine.

52. (Previously Presented) The composition of Claim 50 having a quantity of the reactive agent sufficient to provide an in vivo concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

53. (Previously Presented) The composition of Claim 50, the reactive agent being a dehydrogenase.

54. (Currently Amended) The composition of Claim 53, the dehydrogenase ~~[[is]]~~ being selected from the group consisting of alcohol dehydrogenase and acetaldehyde dehydrogenase.

55. (Previously Amended) The composition of Claim 53, wherein the dehydrogenase has a concentration in the range 0.1 and 10 I. U./L.

56. (Previously Presented) The composition of Claim 42, further including an accelerant.

57. (Previously Amended) The composition of Claim 56, the accelerant being selected from the group consisting of adenosine 5'-triphosphate, adenine-9- β -D-arabinofurasnoside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2',3'-dideoxyadenosine 5'-triphosphate.

58. (Previously Amended) The composition of Claim 56, the accelerant being selected from the group consisting of fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

59. (Previously Amended) The composition of Claim 56, having a quantity of the accelerant sufficient to provide an in vivo concentration in the range from 1% to 100% of a maximum in vivo molar concentration of ethanol.

60. (Previously Amended) The composition of Claim 42, further including a charge-transfer agent.

61. (Previously Amended) The composition of Claim 60, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

62. (Previously Amended) The composition of Claim 61, wherein the isoflavanoid is daidezin and the pyranoside thereof is aloin.

63. (Previously Amended) The composition of Claim 60, the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

64. (Previously Amended) The composition of Claim 60 having a quantity of the charge-transfer agent sufficient to provide an in vivo concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo molar concentration of ethanol.

65. (Previously Presented) The composition of Claim 42, further comprising a surfactant.

66. (Previously Amended) The composition of Claim 65, the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

67. (Currently Amended) The composition of Claim 65, ~~[[the]]~~ having a quantity of the surfactant sufficient to provide an in vivo concentration ~~[[of the surfactant being]]~~ in the range 0.02% and 0.2% by volume.

68. (Previously Amended) The composition of Claim 65, wherein the surfactant is also a charge-transfer agent.

69. (Currently Amended) The composition of Claim 68, wherein the surfactant and charge-transfer agent is selected from the group consisting of lipoic acid, retinoic acid, retinal, retinol, and derivatives and analogs thereof wherein the deviations and analogs are surfactants that are also charge transfer agents from the group.

70. (Previously Amended) The composition of Claim 68, having a quantity of the surfactant and charge-transfer agent sufficient to provide an in vivo concentration of the surfactant and charge-transfer agent between 0.1% and 2% of a maximum molar concentration of ethanol.

71. (Currently Amended) The composition of Claim ~~[[42]]~~ 53, further including a stabilizing ion.

72. (Previously Amended) The composition of Claim 71, the stabilizing ion being zinc.

73. (Previously Amended) The composition of Claim 72, the concentration of zinc ions being 1% of the molar concentration of a dehydrogenase.

74. (Previously Amended) The composition of Claim 42, further comprising a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

75. (Previously Presented) The composition of Claim 42, further comprising a medication.

76. (Currently Amended) The composition of Claim 75, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and [[acetaminophin]] acetaminophen.

77. (Previously Amended) The composition of Claim 42, being configured in a form selected from the group consisting of a solution, a suspension, a capsule, a gel caplet, a transdermal patch and a nasal spray.

78. (Previously Presented, Withdrawn) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ and one of acetaldehyde dehydrogenase and alcohol dehydrogenase.

79. (Currently Amended) A composition for accelerating in vivo oxidation of alcohol, the composition comprising NAD^+ , an agent reactive with alcohol and one member selected from the group consisting of a multivalent transition metal ion [[or]] and a complex thereof, the transition metal ion being selected from [[a]] the group [[including]] consisting of the elements of Groups IVa through VIII of the Periodic Table.

80. (Currently Amended) The composition of Claim 79, wherein the species is [[further comprising a multivalent transition metal ion or a complex thereof,]] selected from the group consisting of potassium ferricyanide; ammonium iron (III) citrate; ammonium molybdate; ammonium phospho molybdate; sodium tungstate; sodium phospho tungstate; ammonium manganese (III) sulfate; zirconium (IV) EDTA; niobium (IV) EDTA; tetrakis(tropolinato) niobium (V) chloride; tetrakis(tropolinato) tantalum (V) chloride; cobalt (III) hexamine chloride; [[or]] and chromium (III) picolinate.

81. (Currently Amended) The composition of Claim [[79]] 80 having a sufficient quantity of the transition metal ion to provide an in vivo concentration of the ion in the range 0.05% to 2% of a maximum in vivo molar concentration of ethanol.

82. (Previously Presented) The composition of Claim 79 having a quantity of NAD^+ sufficient to provide an in vivo concentration of NAD^+ in the range 0.05% to 5% of a maximum in vivo molar concentration of ethanol.

83. (Currently Amended) The composition of Claim 79 further comprising [[also]] a base.

84. (Currently Amended) The composition of Claim 83, having a quantity of the base sufficient to provide an in vivo concentration of the base at least chemically equivalent to an acid resulting from the oxidation of the ethanol.

85. (Currently Amended) The composition of Claim 83 wherein the base [[includes one]] is selected from the group consisting of sodium carbonate, sodium bicarbonate, trisodium phosphate, disodium hydrogen phosphate and tris(hydroxymethyl)-aminomethane.

86. (Currently Amended) The composition of Claim 79, further comprising an agent reactive with acetaldehyde.

87. (Currently Amended) The composition of Claim 86, the reactive agent being selected from [[a]] the group [[including]] consisting of lysine, arginine, thiamine, and pyridoxamine.

88. (Previously Amended) The composition of Claim 86 having a quantity of the reactive agent sufficient to provide an in vivo concentration of the reactive agent at least chemically equivalent to an amount of acetaldehyde resulting from the oxidation.

89. (Currently Amended) The composition of Claim 79, wherein the agent reactive with alcohol is dehydrogenase [[has]] having a concentration in the range 0.1 and 10 I. U./L.

90. (Previously Presented) The composition of Claim 79, further including an accelerant.

91. (Currently Amended) The composition of Claim 90, the accelerant being selected from [[a]] the group [[including]] consisting of adenosine 5'-triphosphate, adenine-9- β -D-arabinofuranside 5'-triphosphate, 2'-deoxyadenosine 5'-triphosphate, and 2', 3'-dideoxyadenosine 5'-triphosphate.

92. (Currently Amended) The composition of Claim 90, the accelerant being selected from [[a]] the group [[including]] consisting of fructose, arabinose, ribose, deoxyribose, and their phosphorylated derivatives.

93. (Previously Amended) The composition of Claim 90, having a quantity of the accelerant sufficient to provide an in vivo concentration in the range from 1% to 100% of a maximum in vivo molar concentration of ethanol.

94. (Currently Amended) The composition of Claim 79 further including a charge-transfer agent.

95. (Previously Amended) The composition of Claim 94, the charge-transfer agent being selected from the group consisting of an isoflavanone and a pyranoside thereof.

96. (Previously Amended) The composition of Claim 95, wherein the isoflavanone is daidzein and the pyranoside thereof is aloin.

97. (Previously Amended) The composition of Claim 94, the charge-transfer agent being selected from the group consisting of methoxatin, pyridoxine, pyridoxamine, pyridoxamine phosphate and thiamine.

98. (Previously Amended) The composition of Claim 94 having a quantity of the charge-transfer agent sufficient to provide an in vivo concentration of the charge-transfer agent in the range from 0.1% and 2% of a maximum in vivo molar concentration of ethanol.

99. (Previously Presented) The composition of Claim 79, further comprising a surfactant.

100. (Previously Amended) The composition of Claim 99, the surfactant being selected from the group consisting of saponin, taurine, oleic acid and lecithin.

101. (Currently Amended) The composition of Claim 99, [[the]] having a quantity of the surfactant sufficient to provide an in vivo concentration [[of the surfactant being]] in the range 0.02% and 0.2% by volume.

102. (Previously Amended) The composition of Claim 99, wherein the surfactant is also a charge-transfer agent.

103. (Currently Amended) The composition of Claim 79, further including a stabilizing ion.

104. (Previously Amended) The composition of Claim 103, the stabilizing ion being zinc.

105. (Currently Amended) The composition of Claim 104, the concentration of zinc ions being 1% the molar concentration of the [[dehydrogenase]] agent reactive with alcohol.

106. (Previously Presented) The composition of Claim 79, further comprising a dietary composition selected from the group consisting of garlic oil, onion oil and dietary fiber.

107. (Previously Presented) The composition of Claim 79, further comprising a medication.

108. (Currently Amended) The composition of Claim [[79]] 107, the medication being a pain-relief agent selected from the group consisting of aspirin, ibuprofen and [[acetaminophin]] acetaminophen.

109. (Currently Amended) The composition of Claim 79, being configured in a form selected from [[a]] the group [[including]] consisting of a solution, a suspension, a capsule, a gel caplet, a transdermal patch and a nasal spray.